

REMARKS

Claims 1-18 are pending in this application. Claims 1-5 and 10-14 stand rejected and claims 6-9 and 15-18 are objected to. Applicant wishes to thank the Examiner for the indication of allowable subject matter in claims 6-9 and 15-18. In light of the remarks set forth below, Applicants respectfully submit that each of the pending claims is in immediate condition for allowance.

Claims 1-3 and 10-12 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,978,407 ("Chang"). Applicant respectfully requests reconsideration and withdrawal of this rejection.

Among the limitations of claims 1 and 10 not present in the cited reference is a cooling tube with an anti-reflection area on a portion of an outer surface thereof and a high reflection area for the pumping light on another portion of the outer surface on which said antireflection area is absent. As should be noted, the claim explicitly recites that the cooling tube has an antireflection area as well as a high reflection area on its outer surface. These two distinct coatings on the outer surface of the cooling tube are not present in Chang.

In Chang, a light concentrator channel made of solid, transparent materials 40 such as glass or fused silica receive light from the pump radiation source 33. A surface of the light concentrator channel is gold coated. However, this gold coated surface of channel 24 is not the outer surface of a cooling tube. In fact, as shown in Figures 2 and 6A, the flow tube does not have either an antireflection area nor a high reflection area. As such, Chang fails to anticipate claims 1-3 and 10-12.

Another object of the present invention is how to efficiently fabricate an antireflection area, a high reflection area, and a diffusion area in a cooling tube and simplify a mechanism so as to obtain a high-output high quality laser. The present

invention is characterized in that it provides an antireflection area, high-reflection area, and diffusion area in the cooling tube. These features are embodied in the pending claims.

Chang describes that the side-pumped laser type diode-pumped solid state laser uses a cooling tube, and there is an antireflection area in the cooling tube. However, in Chang there is no high-reflection area and the rod optical axis is shifted. This corresponds to a technique using the reflection components (12a to 12c) provided with both condenser lens and high-reflection area (or diffusion area) of the prior art described in the specification of the present invention. Such prior art has, as described in the specification of the present invention, a problem in that an increase in the number of components results in high cost and complexity.

The present invention is different from the prior art recited in the cited reference in that an antireflection film and a high reflection area are provided directly on the water jacket of to the prior art and a laser diode light is directly introduced into the laser rod without passing through a space propagation path or optical propagation components. In addition, similarly for off-axis pumping into the rod, in the present invention, a laser diode light is directly introduced into the laser rod, without passing through a space propagation path and optical propagation components, in a manner that the rod center axis has been shifted.

The above-described characteristics of the present invention, as claimed, have not been disclosed in the prior art recited and the present invention is therefore not easily achieved from the cited reference.

Claims 5 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art. Applicants respectfully submit that claims 5 and 14 are allowable over the admitted prior art. Claims 5 and 14 ultimately

depend from independent claims 1 and 10 respectively. The prior art fails to disclose the explicitly recited limitations of the independent claims. As such, the claims which depend from the independent claims are also not anticipated by the admitted art. Therefore, Applicants respectfully submit that all of the pending claims are in immediate condition for allowance and the rejection of claims 5 and 14 under 35 U.S.C. § 103 should be withdrawn.

Applicants have responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

If the Examiner believes an interview would be of assistance, the Examiner is welcome to contact the undersigned at the number listed below.

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Respectfully submitted,

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